

CLAIMS:

1. A RF antenna comprising a single conductor arranged in polygonal spiral form, and means for connecting the conductor to an antenna feed at or adjacent one end of the conductor, the other end of the conductor being open-circuited, the polygonal spiral form comprising successive linear sections each forming an angle with a succeeding or preceding one, the total length of the conductor and the spacing of adjacent co-extending sections being such that the antenna exhibits resonances in a plurality of frequency bands.
2. An antenna as claimed in claim 1, wherein the lengths of the sections and the angles between them are such that the antenna is linearly polarised.
3. An antenna as in claim 1 or 2, wherein opposite sides of the generally spiral form comprises at least three major sides which are markedly non-parallel with each other.
4. A RF antenna comprising a single conductor arranged in a generally spiral form, and means for connecting the conductor to an antenna feed at or adjacent one end of the conductor, the other end of the conductor being open-circuited, wherein the envelope of the generally spiral form comprises three, four or five major sides which are markedly non-parallel with each other, the total length of the conductor and the spacing of adjacent co-extending sections being such that the antenna exhibits resonances in a plurality of frequency bands.
5. A RF antenna comprising a single conductor arranged in a generally spiral form, and means for connecting the conductor to an antenna feed at or adjacent one end of the conductor, the other end of the conductor being open-circuited, the envelope of the spiral form comprising three major sides disposed so as to lie in a triangular relationship, the total length of the conductor and the spacing of adjacent co-extending sections being such that the antenna exhibits resonances in a plurality of frequency bands.

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6. An antenna as in any of claims 3, 4 or 5, wherein an end of each major side merges with an end of an adjoining major side.
 7. An antenna as claimed in any of claims 3, 4 or 5, wherein the lengths and angles between the major sides are such that the antenna is linearly polarised.
 8. An antenna as claimed in claim 7, wherein the aspect ratio of the overall envelope of the spiral form is chosen such that the antenna has a required ratio of horizontal and vertical polarization.
 9. An antenna as claimed in any of claims 4 to 8, wherein an overall envelope of the spiral form is substantially in the shape of an equiangular triangle.
 10. An antenna as claimed in any of claims 4 to 8, wherein an overall envelope of the spiral form is substantially in the shape of an isosceles triangle.
 11. An antenna as claimed in claim 10, wherein, when the antenna is disposed generally upright, a top side of the overall envelope of the spiral form is shorter than the other two sides of the overall envelope.
 12. An antenna as claimed in any preceding claim, wherein co-extensive parts of the spiral form extend generally parallel to each other.
 13. An antenna as claimed in claim 9, wherein, when the antenna is disposed generally upright, from its one end the conductor is adapted to extend upwardly at an angle, then generally horizontally, then generally downwardly at an angle to a point adjacent its one end, thereby forming a first outer side, a top outer side and a second outer side, respectively, and then to extend upwardly, horizontally and downwardly within the outer sides to form a first inner side, a top inner side and a second inner side, respectively.

14. An antenna as claimed in claim 13, wherein the first and top inner sides are each approximately 0.8 as long as the respective first and top outer sides, and wherein the spacing between the first outer side and first inner side and between the top outer side and the top inner side are each approximately 0.1 of the length of the first outer side.
15. An antenna as claimed in claim 14, wherein the second inner side is approximately one-third the length of the second outer side.
16. An antenna as claimed in any preceding claim, wherein the one end of the conductor is an outer end of the spiral form.
17. An antenna as claimed in any preceding claim, and also comprising a stub antenna extending from the one end of the conductor so as to be alongside an outermost portion of the spiral form, the stub antenna providing a required additional resonant frequency.
18. An antenna as claimed in claim 13, 14 or 15, and also comprising a stub antenna extending from the one end of the conductor so as to be alongside the first outer side.
19. An antenna as claimed in claim 18, wherein the stub antenna is approximately 0.4 the length of the first outer side.
20. An antenna as claimed in claim 19, wherein the spacing of the stub antenna from the first outer side is approximately 0.1 the length of the stub antenna.
21. An antenna as claimed in claim 20, wherein the antenna has resonant frequencies at approximately 100 MHz and 220 MHz.
22. An antenna as claimed in any preceding claim, further comprising a ground plane functionally adjacent the conductor.

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23. An antenna as claimed in any preceding claim, in combination with a further said antenna, the two antennas being arranged as a dipole.
24. An antenna as claimed in any preceding claim, mounted on a substrate for attachment to a window or other surface.
25. A window or vehicle body panel or other vehicle fitment comprising an antenna as claimed in any preceding claim.
26. A window or vehicle body panel or other vehicle fitment as claimed in claim 25, wherein the window or body panel forms a dielectric between the antenna and the ground plane.
27. A method of manufacturing an antenna, comprising disposing or defining a single conductor in a polygonal spiral form with a feed connection at or adjacent one end thereof, and selecting the spacing between adjacent co-extensive sections of the polygonal spiral form and/or an overall length of the conductor such that the antenna has a plurality of required resonant frequencies.
28. A method as claimed in claim 27 comprising selecting the length and angles between successive sections of the polygonal spiral form such that the antenna has a required ratio of horizontal and vertical polarisation.

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